

SCIENCE

And Technology Program



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FY 1999 - FY 2001

Metal structures are an integral part of nearly all of the Bureau of Reclamation's projects. Maintaining these structures in a serviceable condition throughout their design life is essential to the reliable operation of a project. Because of the significant impact the failure of a single structure can have on the operation of a project, it would be beneficial to monitor these structures continuously for signs of structural degradation. Such monitoring could detect abnormal conditions or changes in their structural characteristics that would be precursors to failure or degraded structural integrity.

Information about metal structures that has previously been unavailable or impractical to obtain in the field has become available through the use of instrumentation based on new technologies. The availability of data acquisition systems capable of processing data as they are monitored and then telemetering the data back to a central point is an added capability.

The objective of this project is to evaluate new instrumentation technology that is appropriate for use on metal structures in the field. This instrumentation will be evaluated in the laboratory and then installed in the field for an extended period while its performance is evaluated.

The project is currently undergoing the field evaluation phase. To this point, instrumentation was selected and evaluated in the laboratory. An instrumentation and data acquisition system was assembled and tested. This system has been installed in the field and is currently operating. The system will be in the data acquisition phase of the project for all of FY 2000. During this time, the data will be evaluated and changes to the system implemented as required. A final report will be prepared in FY 2001.

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